



DAILY CURRENT AFFAIRS 08-10-2025

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GS-3

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Schedule M Norms

Syllabus: GS-2: Governance - Rules and Regulations.

Context:

- The **Union Health Ministry** has directed **strict enforcement** of the revised *Schedule M* norms.
- Trigger: Reports of **child deaths** due to **cough syrups contaminated with diethylene glycol (DEG)**, exposing gaps in manufacturing standards.

About Schedule M

Definition

- Schedule M is a **section under the Drugs and Cosmetics Act, 1940** that prescribes **Good Manufacturing Practices (GMP)** for pharmaceutical manufacturing in India.
- It lays down **minimum standards** for:
 - Facility design and hygiene
 - Equipment and process control
 - Quality management
 - Personnel qualification
 - Documentation and record-keeping



Evolution and Background

Period	Key Development
1945	Introduced under <i>Drugs and Cosmetics Rules</i> to regulate drug quality.

Period	Key Development
Earlier Framework	Focused on hygiene and basic record-keeping; lacked emphasis on process validation, data integrity, or risk management.
Revision (2023-24)	Updated to align with WHO-GMP and PIC/S (Pharmaceutical Inspection Co-operation Scheme) standards.
Compliance Deadline	All pharma units must comply by December 31, 2025 .

Key Features of the Revised Schedule M

Feature	Description
1. Pharmaceutical Quality System (PQS)	Mandatory integrated quality framework throughout manufacturing, packaging, and distribution.
2. Quality Risk Management (QRM)	Scientific, evidence-based risk identification and mitigation to prevent contamination or product failure.
3. Data Integrity - ALCOA+	Records must be Attributable, Legible, Contemporaneous, Original, Accurate , plus Complete, Consistent, Enduring, and Available .
4. Pharmacovigilance System	Compulsory tracking and reporting of Adverse Drug Reactions (ADR) for post-market safety.
5. Equipment & Process Validation	Lifecycle validation approach— Design, Installation, Operation, and Performance Qualification (DQ, IQ, OQ, PQ) .
6. Supply Chain & Vendor Traceability	Full traceability of raw materials with digital monitoring and supplier audits .
7. Infrastructure Modernisation	Computerised storage, temperature control, contamination-prevention zones, and periodic self-inspections.

Significance

- Brings **Indian GMP norms in line with global standards**, strengthening India's pharmaceutical credibility.
- Prevents **substandard and adulterated drugs**, thereby protecting **public health** and export reputation.
- Promotes a **culture of quality assurance** rather than mere regulatory compliance.

About Diethylene Glycol (DEG)

Aspect	Details
Chemical Formula	$C_4H_{10}O_3$
Nature	Colorless, odorless, syrupy organic solvent . Belongs to the glycol family .
Industrial Use	Used in antifreeze, coolants, paints, plastics, brake fluids, lubricants .
Not approved	Not permitted for use in pharmaceutical or food formulations.
Source	By-product of ethylene oxide hydrolysis .
Toxicity	Ingestion causes acute kidney failure, liver damage, metabolic acidosis, and death .
Cause of Contamination	Occurs when industrial-grade DEG is substituted for pharmaceutical-grade glycerine or propylene glycol , often due to poor quality control or cost-cutting .

Marshland Trap

Syllabus: GS-2: International Relations – Border dispute.

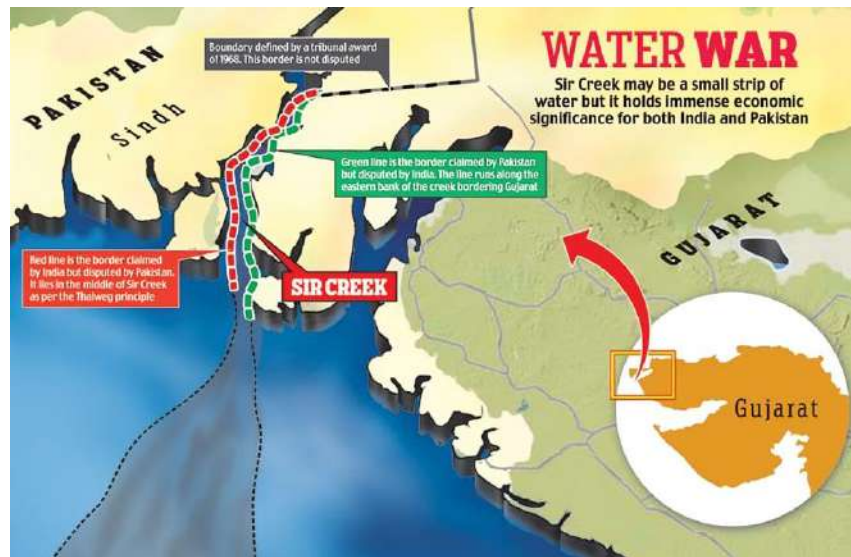
Context:

- The Defence Minister of India warned Pakistan that *“any misadventure in the Sir Creek sector will invite a decisive response”*.
- The warning comes amid reports of increased military activity by Pakistan near the Sir Creek region.

About Sir Creek

- **Nature:** A **98-km long uninhabited tidal estuary** located in the **Rann of Kutch marshlands**, opening into the **Arabian Sea**.
- **Named After:** A British representative; originally called **Ban Ganga**.
- **Location:**
 - **East:** Rann of Kutch, Gujarat (India)

- **West:** Sindh Province (Pakistan)



Background of the Dispute

➤ Historical Context:

- Originates from the **1914 Bombay Presidency Resolution**, which demarcated the boundary between **Kutch (India)** and **Sindh (then part of British India, now in Pakistan)**.

➤ Post-Independence Developments:

- After the **1965 Indo-Pak War**, Pakistan claimed jurisdiction over **half of the Rann of Kutch**.
- The dispute was referred to an **international tribunal (1968)**, which awarded **90% of the Rann to India**, but **excluded Sir Creek** from its scope — leaving it unresolved.

Core of the Dispute

- The disagreement lies in the **interpretation of the boundary** in the Sir Creek region:
 - **India's Claim:** The boundary should follow the **mid-channel (Thalweg principle)** since the creek is **navigable**.
 - **Pakistan's Claim:** The creek is **non-navigable**, and hence the **eastern bank** should mark the boundary.

The Thalweg Principle

- **Definition:** In international law, when two states share a navigable river or waterway, the **boundary follows the line of greatest depth (mid-channel)**.
- **Purpose:** Ensures **equal access and use for navigation** by both nations.

- **India's Position:** Since Sir Creek is navigable, this principle applies.
- **Pakistan's Position:** The creek is not navigable; hence, the principle is irrelevant.

Strategic and Economic Significance

- **Energy:** Potential **oil and gas reserves** in the area.
- **Fisheries:** Important for **fishing rights** in adjoining waters.
- **Security:**
 - Region guarded by **BSF, Indian Army, Coast Guard, and Air Force.**
 - Terrain is **inhospitable** and **difficult to patrol**, prone to **smuggling and infiltration.**
- **Proximity:** Close to **Mundra and Kandla ports**, vital for **India's maritime trade and security.**

Environmental Aspects

- **Ecology:** Located within the **Rann of Kutch**, a fragile ecosystem with **salt marshes and tidal wetlands.**
- **Fauna:** Habitat for **poisonous snakes, scorpions**, and migratory birds.

Challenges in Settlement

- **Terrain & Weather:** Sparse population, harsh climatic conditions make ground demarcation difficult.
- **Political Sensitivity:** Dispute often resurfaces amid **India-Pakistan tensions.**
- **Maritime Implications:** The final demarcation affects the **Exclusive Economic Zone (EEZ)** and **continental shelf rights** in the Arabian Sea.

Conclusion

- The **Sir Creek dispute** remains one of the **minor yet strategically significant** border issues between India and Pakistan.
- Resolution would not only improve **bilateral trust** but also facilitate **maritime resource exploration** and **fishermen's livelihoods.**

NATO Pipeline System

Syllabus: GS-2: International Relations.

Context:

- **Poland** recently announced its decision to **join the NATO Pipeline System (NPS)**, enhancing its strategic energy and defence integration with NATO allies amid rising regional tensions.

About NATO Pipeline System

- **Established:** During the **Cold War era**.
- **Purpose:** To ensure a **reliable and efficient fuel supply** to NATO forces in Europe for both peacetime and wartime operations.



Key Features

- **Length:** ~10,000 km
- **Coverage:** Runs through **12 NATO member countries**.
- **Storage Capacity:** **4.1 million cubic metres** of fuel.
- **Infrastructure Includes:**
 - Fuel storage depots,
 - Military air bases and civil airports,

- Pumping stations,
- Truck and rail loading stations,
- Refineries,
- Entry/discharge points for fuel distribution.

Funding & Management

➤ Funding Source:

- Bulk fuel distribution funded under the **NATO Security Investment Programme (NSIP)** – a **common-funded initiative**.

➤ Control:

- Most networks are managed by **national organisations** of member states.
- The **Central Europe Pipeline System (CEPS)** is a **multinational system**, managed by the **CEPS Programme Office** under the **NATO Support and Procurement Agency (NSPA)**.

Organisational Structure

➤ Petroleum Committee:

- Senior advisory body within NATO on **consumer logistics and petroleum-related issues**.

➤ Reporting Structure:

- Reports to the **Logistics Committee**, which oversees all NATO activities linked to **military fuel and petroleum installations**.

➤ Components:

- Consists of **eight national pipeline systems** and **two multinational systems** (including CEPS).

Significance

➤ Strategic Importance:

- Enhances NATO's **operational readiness and energy security**.
- Ensures **logistical autonomy** for NATO during military deployments.
- Reduces dependence on civilian fuel infrastructure in crisis situations.

➤ For Poland:

- Strengthens **Eastern European defence logistics** amid **Russia–NATO tensions**.
- Integrates Poland more closely into **NATO's collective security network**.

Southeast Asia's First Coral Larvae Cryobank

Syllabus: GS-3: Biodiversity Conservation

Context

- The **Philippines** has launched **Southeast Asia's first coral larvae cryobank**, a pioneering conservation initiative aimed at **preserving coral biodiversity** and **reviving degraded reefs**.
- It comes amid rising concerns over **coral bleaching**, **marine heatwaves**, and **climate change** impacts on coral ecosystems.

About the Coral Larvae Cryobank

- A **scientific facility** designed to **freeze and store coral larvae** at ultra-low temperatures for long-term preservation.
- Functions as a **"genetic seed vault"** for corals — preserving genetic material for **future reef restoration** and **research**.



Participating Nations

- Regional network under the **Coral Research & Development Accelerator Platform (CORDAP)**.
- Member countries: **Philippines, Taiwan, Indonesia, Malaysia, and Thailand**.
- Forms part of a wider **Coral Triangle Cryobank Network**, integrating regional expertise.

How It Works

➤ **Collection of Coral Larvae**

- Collected during **spawning events**, when corals release eggs and sperm into seawater.

➤ **Cryoprotection**

- Larvae are treated with **cryoprotective agents** to prevent ice crystal formation.

➤ **Vitrification Process**

- Rapid freezing by plunging into **liquid nitrogen (-196°C)**; larvae become glass-like without crystallisation.

➤ **Revival (Thawing)**

- **Laser-based rapid warming** ensures safe thawing without damaging cells.

➤ **Rehydration & Regrowth**

- Revived larvae are rehydrated, observed for movement and settling, then transferred to **controlled tanks** for coral regrowth.

Key Features and Significance

➤ **Preserves Coral Genetic Diversity**

- Ensures survival of coral genotypes even if species go extinct in the wild.

➤ **Climate-Resilient Restoration**

- Enables adaptive reef restoration in warming oceans using preserved larvae.

➤ **Scientific Resource**

- Offers valuable data for research on **coral evolution, reproduction, and stress tolerance**.

➤ **Regional Collaboration**

- Promotes shared scientific protocols and knowledge across Coral Triangle nations.

➤ **Model Species Approach**

- Initial focus on resilient corals such as *Pocillopora*, *Acropora*, and *Galaxsia*; later expansion to endangered species.

Limitations and Challenges

➤ **Technical Challenges:**

- Coral larvae are **large, lipid-rich, and heat-sensitive**, making vitrification complex.

- **Species-Specific Protocols:**
 - Each species requires different freezing and revival parameters.
- **Low Survival Rates:**
 - Only a fraction of thawed larvae survive or successfully recolonise reefs.
- **Infrastructure and Cost Constraints:**
 - High setup costs and need for specialised cryogenic facilities limit scalability in developing nations.

IUCN World Conservation Congress 2025

Syllabus: GS-3: Environment related summits and conferences.

Context

- India will unveil its **first-ever Red List of Endangered Species** at the **IUCN World Conservation Congress (WCC) 2025** to be held in **Abu Dhabi, UAE**.



About IUCN World Conservation Congress (WCC)

- **Organizer:** International Union for Conservation of Nature (IUCN).
- **Frequency:** Held **every 4 years (quadrennial)**.
- **Nature:** Largest global gathering for **conservation policy, research, and action**.
- **Participants:** Governments, NGOs, scientists, indigenous communities, private sector leaders, and international organisations.

➤ **Objective:**

- To set global priorities for **biodiversity conservation**,
- Strengthen **climate action**, and
- Promote **sustainable development** through collective decisions.

Host Country (2025):

- **United Arab Emirates (Abu Dhabi)**

Historical Background

- **First Congress:** 1948 (same year IUCN was founded).
- **India's Membership:** India became an **IUCN State Member in 1969**.
- **Previous Edition (2021):**
 - Held in **Marseille, France**.
 - Themes: Post-COVID recovery, tackling biodiversity loss, and addressing the climate emergency.

Themes of IUCN Congress 2025

- **Scaling Up Resilient Conservation Action** – Strengthening ecosystem restoration and species protection.
- **Reducing Climate Overshoot Risks** – Accelerating mitigation to avoid ecological tipping points.
- **Delivering on Equity** – Promoting inclusive, community-led conservation models.
- **Transitioning to Nature-Positive Economies and Societies** – Encouraging circular economy and green finance.
- **Disruptive Innovation and Leadership for Conservation** – Using technology, AI, and youth-driven innovation for breakthroughs.

Participants

- Over **9,000 delegates** from across the world.
- Includes **Heads of State, policy experts, scientists, and business leaders**.
- Representation from:
 - CBD (Convention on Biological Diversity)
 - UNFCCC (Climate Change Convention)
 - Ramsar Convention (Wetlands)
 - UNEP (Environment Programme)

Key Features

Feature	Description
Global Voting Forum	1,400+ IUCN member organisations vote on key conservation resolutions.
Marketplace for Innovation	Platform to showcase research, tech solutions, and nature-based innovations.
Networking Hub	Facilitates collaboration among scientists, NGOs, and policymakers.
Public Outreach	Includes exhibitions, film screenings, and awareness activities.
Outcome Document	Adoption of a Global Conservation Declaration guiding biodiversity targets till 2030.

Significance

- Strengthens **global environmental governance** and aligns conservation goals with **Paris Agreement** and **Kunming-Montreal Global Biodiversity Framework (GBF)**.
- Provides India an opportunity to **showcase indigenous conservation models**, launch its **Red List**, and enhance **South-South cooperation** on biodiversity.